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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,910	03/08/2001	Mitsuru Higuchi	OGA-181-USAP	5533

7590 05/19/2004  
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EXAMINER
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NATNAEL, PAULOS M

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/800,910

Applicant(s)

HIGUCHI ET AL.

Examiner

Paulos M. Natnael

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The Final Rejection has been withdrawn due to Applicant's complaint that some language in the claims were missing and not treated as to its merits by the examiner; specifically the phrase "the same horizontal line data of", in claim 1 (e). And a new Final follows.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims **3, 4 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kawai et al**, U.S. Pat. No. 5,157,490 in view of **Dischert**, U.S. Pat. No. 4,415,931.

Considering claims **3, 4 and 5**, Kawai et al discloses the following claimed subject matter, note;

a) a circuit for generating an interlaced scanning signal for display of an image on a TV monitor from an image signal obtained by an image pickup device, is met by Fig.1;

b) and a progressive resolution conversion circuit for generating a non-interlaced scanning signal with higher vertical resolution than a frame signal for a TV monitor by

reading and overlapping same field signals for interlaced scanning, is met by the scanning signal converter **15**, figs. 2 and 3, which receives interlaced scanning signals and converts it into progressive scanning signals as shown at the output 33 of Fig. 2;

c) a field memory for storing a field signal for interlaced scanning, is met by Field memories 17 and 18, fig.3;

Except for;

d) a frame memory for storing a frame signal for non-interlaced scanning.

e) a write/read control circuit for reading twice the same horizontal line data of a field signal in said field memory at a double speed of a write speed for the signal, temporarily writing the signal in said frame memory, and controlling the frame signal in said frame memory such that the same horizontal line data of the frame signal can be read twice at a double speed of a write speed of the frame signal, so that high-density data is compressed in the vertical direction and displayed on one screen, thereby obtaining the non-interlaced scanning signal with higher vertical resolution than the frame signal for the TV monitor;

Regarding d), **Kawai** et al. discloses a video signal of a scanning lines number of 525 lines, field frequency of 59.97 Hz and scanning system interlaced at 2:1 is input into an input terminal 1... and a video signal of a scanning lines number of 525

lines, frame frequency of 29.97 Hz and progressive scanning system is output from the output end of the switch 19. (col. 7, lines 9-26)

**Dischert** discloses a television display system arranged to decrease the visibility of the raster line structure includes a source of line-sequential raster-scanned video signals representative of the image. Each such original line of video information is coupled to and written into a memory. The memory is read two or more times and each line as read is displayed on a television screen the same number of times. The next original line is similarly repeated, to form a display raster in which each horizontal line of video is repeated at least once, thereby reducing the visibility of the line structure by increasing the number of lines displayed.

Therefore, it would have been obvious to those with ordinary skill in the art at the time the invention was made to modify the system of Kawai et al. by providing the memory system of Dischert that stores each incoming signal whether converted signal or not, and then reads the video signal twice to make it compatible for display on the display device.

Regarding e), **Kawai** discloses that "In the scanning line converting circuit 15, the first and second fields of this signal are memorized respectively in the FIFO memories 17 and 18, and, are alternately read out in a line period by the switch 19 and thereby, as shown in FIG. 4(b), the input signal is converted to a video signal of a progressive scanning system of a frame frequency of 30 Hz and is output." (col. 8, lines 55-66) The write/read circuit and reading the horizontal line twice is, nonetheless, notoriously well

known in the art. **Kawai** et al also teaches time compressing circuits and that "The output of the switching circuit 20 is compressed in the time to 1/2 by the time compressing circuit 30 and is output through the switch 33. Also, the output of the switching circuit 21 is delayed by 1/60 second by the delaying circuit 31, is then compressed in the time to 1/2 by the time compressing circuit 32 and is output through the switch 33 which alternately outputs the outputs of the time compressing circuits 30 and 32 in a field period. Thereby, as shown in FIG. 4(c), a progressive scanning system video signal (of a scanning line number of 525 lines) of a frame frequency of 60 Hz will be output from the switch 33. When the temporal component from the adder 36 is turned in the polarity by the polarity turning circuit 28 and is delayed by 1/60 second by the delaying circuit 31 and the switch 33 switches the outputs of the time compressing circuits 30 and 32 in a field period and outputs them, the temporal component will be equivalently converted to a field turning signal and a temporal component of a space frequency of 30 Hz will be reproduced. When this temporal component is added to the resolution signal by the adder 25, the motion at the time of a moving picture will not become unnatural. (col. 9, lines 31-54) Furthermore, **Kawai** discloses that "a scanning line converting means for storing a first field signal and a second field signal of an input interlaced scanning signal, alternately reading out the stored first and second field signals on each scanning line and thereby generating a progressive scanning signal of the same frame frequency as the input interlaced scanning signal". (col. 13, 9-16)

[emphasis added]

**Dischert** discloses television display with doubled horizontal lines wherein "each incoming horizontal line of video information is stored in a memory and read twice at a double clock frequency." (see abstract) **Dischert** teaches read control means and write control means which is connected to controllable delay means D1-D4 (fig.3a). The arrangement of Fig.3 illustrates a time-compressor adapted for producing two identical lines for each input line. (col. 4, lines 39-41)

Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of **Kawai** by providing the read and write control means of **Dischert**, in order for the video signals to be read correctly twice from the field memory and written on memory before being output to display device, so that the conversion of the scanning signals from interlaced to progressive is smooth and done properly.

### ***Response to Arguments***

#### **Applicant's Arguments**

- a) Examiner has misquoted paragraph (e) of Applicant's claim 1. The Examiner omitted "the same horizontal line data of.
- b) Neither of the cited reference Kawai or Watanabe is there a memory the same horizontal line data read twice as claimed.

c) Applicant temporarily writes the signal from the frame memory so that data can be compressed. This concept is totally lacking in either of the references taken singularly or in combination.

d) Watanabe's Fig.1 has a single frame memory... This frame is only read once...

Examiner's Response

a) Examiner has inserted the missing phrase which was inadvertently omitted.

b) Reading the horizontal line twice from a memory is well known in the art of television.  
(see the four cited references below for the purpose)

c) As shown in the rejections, Kawai discloses that data compressing is performed in circuits 30 and 32. Kawai teaches that "the output of the switching circuit 21 is delayed by 1/60 second by the delaying circuit 31, is then compressed in the time to 1/2 by the time compressing circuit 32 and is output through the switch 33 which alternately outputs the outputs of the time compressing circuits 30 and 32 in a field period..."(see col. 9, lines 31-54)

d) The rejections are made Kawai (the main reference) in combination with a teaching reference (Watanabe and/or Dischert), and applicants cannot show non-obviousness by attacking references individually where the rejections are based on combination of references.(in re Keller, 208 USPQ 871 (CCPA 1981) ).



***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) Kamemoto, U.S. Pat. No. 4,800,433 discloses progressive scanning conversion system for television image display apparatus comprising, the horizontal line previously stored in the other memory 10b is recovered or read twice.... 9col. 1, line 68 through col. 2, line 4)

(b) Sid-Ahmed, U.S. Pat. No. 5,621,470 discloses interpixel and interframe interpolation of television pictures with conversion from interlaced to progressive scanning. (see col. 3, lines 16-18)

(c) Matsuse et al., U.S. Pat. No. 5,663,765 discloses an apparatus and method for processing image signals comprising a scanning means for reading twice respective signals from each of said storage means in said sequence of selection during a time interval from a point of time after the time when the second image signals corresponding to the top horizontal scanning line in each of said plurality of horizontal scanning line groups are stored. (see col. 2, lines 65 through col. 3, lines 15)

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PMN *DMN*  
May 9, 2004

  
MICHAEL H. LEE  
PRIMARY EXAMINER